**식품영양학과**

**Food & Nutrition**

**Department Introduction**

Food & Nutrition department is a field of natural science dealing with food & nutrition problems related to diet. The Food & Nutrition department was installed at the same time as authorizing the establishment of home economics college on December 26, 1968 and became the first four year Food & Nutrition in the Gyeongsangnbuk-do area. The master's program (Food and Nutrition major) was installed in March, 1974 and doctorate program (Food and Nutrition major) was installed in December, 1979. To provide the opportunity for the graduate school students of this departments to perform various researches, the Food & Nutrition major was established in September, 2003 by combining Food department and nutrition major. In this department, high quality workers who can be active as specialists in each field including universities, laboratories, hospitals and schools are discharged by performing education and research on theory and experiment related to food and nutrition.

**List of Faculty Members**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Position | Name | Last School Graduated | Degree | Major |
| Professor | Seo, Jung Sook | Seoul National University | Ph.D. | Clinical Nutrition  |
| Professor | Ryu, Kyong  | Yonsei University | Ph.D. | Foodservice Management |
| Associate Professor | Yoon, Kyung Young  | Yeungnam University | Ph.D. | Food Chemistry, Functional Food Science |
| Associate Professor | Bang, Woo Suk  | Mississippi State University | Ph.D. | Food Microbiology and Safety |
| Assistant Professor | Park, Kyong  | University of Minnesota | Ph.D. | Nutritional Epidemiology |

**Academic programs**

Degrees Offered:

Master of Science in Food Nutrition,

Ph.D. in Food Nutrition

**Course Description**

Food & Nutrition department sets the purpose as raising professionals who research related academics based on food and nutrition to be applied on the diet to strive for nutritional improvement of the people and promoting their health along with leading a reasonable diet. In the field of food science research, the education objective is set as developing high value food products through the research on biochemical characteristics of food products & biochemical changes during processing or storage, search of functional substances on food products and the research of physiological activation effect. In the field of nutritional science, the focus is set to the research on metabolism of nutrition, nutritional control of chronic diseases, nutritional assessment, nutritional education and development of counseling programs.

**Programs of study :**

The Food Nutrition Program covers four major area: Nutritional Science, Food Chemistry, Food Microbiology (Safety) and Foodservice Management. An individual program of courses, which includes certain core requirements, is developed for each student by an advisory committee. The choice of research, as well as faculty adviser, depends on the research interests of the student. Since the department has a program of study approach to graduate studies, students with degrees in Food Nutrition major, are able to design challenging academic programs that will prepare them for successful careers in the food company, university, government, research institute and hospital or in academia.

**Degrees Offered:**

Master of Science in Food Nutrition,

Ph.D. in Food Nutrition

**Major**

-Food and Nutrition

1) Nutritional Science

2) Food Science

3) Foodservice Management

**Faculty members**

1) **Seo, Jung-Sook**

- POSITION : Professor

- DEGREE : Ph.D. Seoul National University

- MAJOR : Clinical Nutrition

- TEL : +82-53-810-2875

- FAX : +82-53-810-4768

- EMAIL : jsseo@ynu.ac.kr

RESEARCH INTERESTS

- Nutritional management of chronic diseases such as cardiovascular disease, diabetes mellitus and obesity

- Vitamin A metabolism and function

- Nutritional assessment and intervention of high-risk people

SELECTED PUBLICATION

\* Lycopene supplementation suppresses oxidative stress induced by a high fat diet in gerbils. Nutrition Research and Practice 7(1):26-33, 2013

\* Anti-obesity effect of resveratrol-amplified grape skin extracts on 3T3-L1 adipocytes differentiation. Nutrition Research and Practice 6(4):286-293, 2012

\* Suppression of oxidative stress by grape seed supplementation in rats. Nutrition Research and Practice 6(1):3-8, 2012

\* Tangerine tomatoes increase total and tetra-cis-lycopene isomer concentrations more than red tomatoes in healthy adult humans. International Journal of Food Sciences and Nutrition 60(S1):1-16, 2009

\* Grape skin improves antioxidant capacity in rats fed a high fat diet. Nutrition Research and Practice 3(4):279-285, 2009

2) **Ryu, Kyong**

- POSITION : Professor,

- DEGREE : Ph.D., Yonsei University

- MAJOR : Foodservice Management

- TEL : +82-53-810-2876

- FAX : +82-53-810-4768

- EMAIL : akryu@ynu.ac.kr

RESEARCH INTERESTS

- HACCP system implementation in foodservice operations

- Foodservice quality management

SELECTED PUBLICATION

\* Determination of strategies for the reduction of plate waste and prevention of plate waste reuse in foodservice operations. Journal of Food Hygiene and Safety 27(3):247-256, 2012

\* Predictive model for growth of *Staphylococcus aureus* in blanched spinach with seasoning. Journal of the Korean Society for Applied Biological Chemistry 55(4):529-533, 2012

\* Growth and predictive model of *Bacillus cereus* on blanched spinach with or without seasoning at various temperatures. Food Science and Biotechnology 21(2)503-508, 2012

\* Feasibility of salivary alpha-amylases for detection of plate waste reuse. Food Science and Biotechnology 20(6):1721-1726, 2011

\* Predictive model for growth of *Staphylococcus aureus* in Suyuk. Korean Journal of Food Science of Animal Resources 30(3):487-494, 2010

3) **Yoon, Kyung-Young**

- POSITION : Associate Professor,

- DEGREE : Ph.D., Yeungnam University

- MAJOR : Food Chemistry

- TEL : +82-53-810-2878

- FAX : +82-53-810-4768

- EMAIL : yoonky2441@ynu.ac.kr

RESEARCH INTERESTS

- Antioxidant activity of medicinal plant or fermented food

- Probiotification of vegetable and fruit juice by lactic acid bacteria

- Enzymatic production of functional sugars from agricultural products

SELECTED PUBLICATION

\* Potato Juice Fermented with Lactobacillus casei as a Probiotic Functional Beverage. Food Science and Biotechnology 21(5): 1301-1307, 2012

\* Cultivar differences in phenolic contents/biological activities of color-fleshed potatoes and their relationships. Horticulture Environment and Biotechnology 53(2): 175-181, 2012

\* Comparison of antioxidant activity in wild plant (*Adenophora triphylla*) leaves and roots as a potential source of functional foods. International Journal of Food Science and Nutrition 60S: 150-161, 2009

\* Analysis of the taste components and antioxidant properties of *Cheonggukjang* containing Korean red ginseng. Food Science and Biotechnology 18(1):53-29, 2009

\* Antioxidant properties and total phenolic contents of medicinal plant *(Elaeagnus multiflora* Thunb.) leaf extracts. Food Sci Biotechnol 17(3):608-612, 2008

4) **Bang, Woo-Suk**

- POSITION : Associate professor, Ph. D

- Degree : Ph.D. Mississippi State University

- MAJOR : Food Microbiology and Safety

- TEL : +82-53-810-2877

- FAX : +82-53-810-4768

- EMAIL : wsbang@ynu.ac.kr

Research Interests

Research is focused on detection methods (traditional and molecular technique) and stress response of pathogens, primarily Vibrio vulnificus, Enterohemorrohagic Escherichia coli, Listeria monocytogenes and Cronobacter sakazakii.

SELECTED PUBLICATION

\*　Impact of storage temperature and product pH on the survival of Listeria monocytogenes in vacuum-packaged souse.　J. Food Prot. 72(3): 637-643, 2009

\*　Scanning electron microscopy studies of Saccharomyces cerevisiae structural changes by high hydrostatic pressure treatment.　Food Sci. Biotechnol.　17:1102-1105, 2008

\*　Effect of salt and sodium nitrite Staphylococcus aureus and detection of enterotoxin during storage of air dry sausage.　J. Food Prot.71:191-195, 2008

\*　Effect of aqueous ozone organic acid on inactivation of microflora in raw materials of saengsik.　J.Food Sci.Nutr.12(3):167-172, 2007

\*　Effect of general and hygienic processing on reduction of microflora during manufacturing of saengsik.　Food Sci. Biotechnol. 16:958-962, 2007

5) **Park, Kyong**

- Position : Assistant Professor, Ph. D

- Degree : Ph.D. University of Minnesota

- Major : Nutritional Epidemiology

- Tel : +82-53-810-2879

- E-mail : kypark@ynu.ac.kr

RESEARCH INTERESTS

Nutritional epidemiology, particularly the effects of behavior, lifestyle and dietary habits on primary risk and secondary prevention of metabolic and cardiovascular diseases

Specific topics of interest:

\* Fish consumption (selenium and mercury) and chronic disease

\* Oxidative stress, inflammation and health

\* Dietary supplements and CVD/metabolic disease

SELECTED PUBLICATION

\* Toenail Selenium and Incidence of Type 2 diabetes in US Men and Women. Diabetes Care. In press

\* The Association between Consumption of Processed Meat and Prevalence of Metabolic Syndrome among Korean Adults. Korean J Nutr. 44(5):406-15, 2011

\* Dietary Supplements and Mortality Rate in Older Women: The IWHS. Archives of Internal Medicine. 171(18):1625-33, 2011

\* Demographic and lifestyle factors and selenium levels in men and women in the U.S. Nutr Res Pract. 5(4):357-64, 2011

\* Egg Consumption and Prevalence of Metabolic Syndrome in Korean Adults. Korean J Community Nutr. 16(3):364-74, 2011

**Course Description**

■ 기초공통(Basic Major Courses)

고급영양이론 3 credit

(ADVANCED NUTRITION)

This course will cover macro- and micro-nutrients and energy metabolism. Specifically, it will provide insights on how they can prevent disease associated with nutrition intake in a variety of different clinical settings.

급식경영학특론 3 credit

(ADVANCED FOODSERVICE ADMINISTRATION)

Materials management and problem-solving for efficient management in foodservice system will be discussed.

생화학특론 3 credit

(ADVANCED BIOCHEMISTRY)

This course covers the organic structure and synthetic process of each biological material, and biochemical metabolic pathway of each nutrient in cells.

식품영양연구 3 credit

(RESEARCH METHODS IN FOOD AND NUTRITION)

Research methodology in foods and nutrition, theory and techniques of physical, chemical, and instrumental analysis will be covered. Applications of these methods to food and animal models with statistical analysis of data are studied.

식품학특론 3 credit

(ADVANCED FOOD SCIENCE)

Students understand the physiochemical changes during cooking and food processing, and discuss the current research trends and techniques for foods.

영양학특론 3 credit

(ADVANCED NUTRITION)

An in-depth study of the nutrients and their function within the cell wiil be discussed. Incorporation of the principles of physiology and biochemistry in the study of nutrition are covered.

응용통계학 3 credit

(ADVANCED STATISTICS)

This course covers statistical designs and methods, data analysis, and interpretation of results in the field of food and nutritional sciences.

■ 전공(Major Courses)

개별연구(1) 3 credit

(INDEPENDENT STUDY (1))

개별연구(2) 3 credit

(INDEPENDENT STUDY (2))

기능성식품학 3 credit

(Functional food Science)

The major nutraceutical ingredient categories of functional foods and the current scientific information including biochemical and physiological efficacy will be discussed.

식품영양학과세미나 3 credit

(SEMINAR IN FOOD AND NUTRITION)

Presentation and descussion on recent research trend in food and nutritional science.

■ 식품영양학전공(MAJOR OF FOOD AND NUTRITION)

고급영양상담및교육 3 credit

(ADVANCED NUTRITION COUNSELING AND EDUCATION)

This subject covers the understanding of the skills to use nutritional knowledge to change food behaviors and to help people with present or potential nutrition problems, through nutrition education or counseling.

급식경영특수과제 3 credit

(TOPICS IN FOODSERVICE MANAGEMENT)

Current issues and recent developments of administration technique including TQM and customer satisfaction in foodservice management are discussed.

급식생산관리 3 credit

(FOOD PRODUCTION MANAGEMENT)

Principles and Application techniques for quantity food production including manu management, production scheduling, facilities planning, safety management and distribution management will be studied.

급식서비스마케팅 3 credit

(SERVICE MARKERTING IN FOODSERVICE)

Service concept, service quality management and marketing strategies for foodservice operations are covered.

급식조직운영론 3 credit

(OPERATIONS MANAGEMENT IN FOODSERVICE)

Concept of organization and organizational behaviors including motivation, work performance and job design in foodservice operations management are covered.

급식품질경영 3 credit

(QUALITY MANAGEMENT IN FOODSERVICE)

Quality management techniques and application strategies for customer satisfaction in foodservice systems will be discussed.

모자영양학 3 credit

(MATERNAL AND INFANT NUTRITION)

This course will provide an overview of nutrition issues affecting females of reproductive age, pregnant and postpartum women, and infants and children through five years of age.

병태생리학 3 credit

(PATHOPHYSIOLOGY)

This course is intended to enable students to evaluate and intervene the patients by providing knowledge on causes, mechanisms, symptoms and diagnosis of chronic diseases.

분자영양학 3 credit

(MOLECULAR NUTRITION)

This course covers the roles of nutrients in the regulation of gene expression and signal transduction pathways.

소비자행동론 3 credit

(CONSUMER BEHAVIOR)

This course covers peoples' consumption-related behaviors and marketing strategies intended to influence those behaviors.

식품가공학특론 3 credit

(ADVANCED FOOD PROCESSING)

Principles and methods of processing of food products. Chemical and physical changes

during processing and the trends in food product development.

식품과문화 3 credit

(FOOD AND CULTURE)

This course covers peoples' consumption-related behaviors and marketing strategies intended to influence those behaviors.

식품과안전성 3 credit

(FOOD AND SAFETY)

To study principles of food safety including microbiological, chemical, and physical hazard analysis, prerequisite program such as GMP and HACCP with be discussed.

식품관능검사론 3 credit

(SENSORY VALUATION)

The theories and principles of sensory evaluation are studied. Also, elements and various analysis methods for food quality are covered.

식품미생물학특론 3 credit

(ADVANCED FOOD MICROBIOLOGY)

Charateristics and kinds of desirable and undesirable microorganisms. Contamination and

spoilage of different kinds of foods. Food-borne poisoning, infections, and intoxication.

식품발효학 3 credit

(FOOD FERMENTATION)

Principles of food fermentation related to the manufacture, processing, will be discussed. Korea traditional fermented foods are included.

식품생물공학 3 credit

(FOOD BIOTECHNOLOGY)

Principles of food biotechnology including recombinant DNA technology and feasible application of biotechnology will be studied.

식품의방향과색 3 credit

(FOOD FLAVOR AND COLOR)

Properties and formation mechanism of flavor and color in food will be studied. Also, their changes during food processing and preservation will be discussed.

식품저장학특론 3 credit

(ADVANCED FOOD PRESERVATION)

Principles and methods of food preservation. Physical and chemical changes during

storage.

식품학연구법 3 credit

(RESEARCH METHODS IN FOOD SCIENCE)

Principle and application of advanced methods in recent food science research will be discussed.

식품효소학 3 credit

(FOOD ENZYMOLOGY)

Mechanism of enzyme activities and application of enzyme food processing will be discussed

아동및청소년기영양 3 credit

(CHILD AND ADOLESCENT NUTRITION)

This course will provide an overview of nutrition issues affecting school-aged children and adolescents: including preschool, elementary, middle & high school children and adolescents.

영양과 노화 3 credit

(NUTRITION AND AGEING)

This course covers the aging mechanism, the influence of nutrition on aging and the relationship between nutrition and diseases of the elderly.

영양소대사 3 credit

(NUTRITION AND METABOLISM)

This course will cover the metabolic and physiological functions of nutrients at the cellular, tissue, and system level, integrating the effects of nutritional status in health and disease, with a evidence-based research approach.

영양역학 3 credit

(NUTRITIONAL EPIDEMIOLIGY)

This course covers principles of nutritional epidemiology, impact assessment of nutrition intervention programs, nutritional surveillance, and recent research in nutritional epidemiology.

영양학연구법 3 credit

(METHODS IN NUTRITION RESEARCH)

This course covers principles and methodologies of recent research in nutrition, and writing of research reports.

운동영양학 3 credit

(NUTRION FOR EXERCISE AND SPORTS)

This course covers the change of nutritional physiology during exercise, and nutritional management for physical fitness and performance.

임상영양실습1 3 credit

(PRACTICE OF CLINICAL NUTRITION 1)

This course will cover the metabolic and physiological functions of nutrients at the cellular, tissue, and system level, integrating the effects of nutritional status in health and disease, with a evidence-based research approach.

임상영양실습2 3 credit

(PRACTICE OF CLINICAL NUTRITION 2)

Students will learn about the specific nutrition management skills, such as nutrition assessments and diet planning using SGA, under the supervision of a clinical dietitian at the clinic.

임상영양실습3 3 credit

(PRACTICE OF CLINICAL NUTRITION 3)

Students will learn about the specific nutrition management skills, such as nutrition assessments and diet planning using SGA, under the supervision of a clinical dietitian at the clinic.

임상영양실습4 3 credit

(PRACTICE OF CLINICAL NUTRITION 4)

Students will develop remedial teaching and learning materials, and practice the clinical nutrition therapy and its diet planning using NCP model under the supervision of a clinical dietitian at the clinic.

임상영양연구 3 credit

(RESEARCH IN CLINICAL NUTRITION)

This course covers various quantitative research methods that are essential tools for dietitians. Students will learn about study designs and methods commonly used in nutritional epidemiology to be able to critically analyse and review the scientific literature of nutrition and dietetics.

임상영양치료1 3 credit

(NUTRITION THERAPY IN CLINICAL CARE 1)

This course is intended to introduce the basic working knowledge in clinical settings, and to help students to understand Nutrition Care Process (NCP) system. It will also guide students to understand the modifications in nutrients and dietary requirements for patients with malnutrition, obesity, diabetes, cardiovascular disease, liver disease, and difficulty swallowing in order to perform adequate nutrition management.

임상영양차료2 3 credit

(NUTRITION THERAPY IN CLINICAL CARE 2)

Students will learn about the modifications in nutrients and dietary requirements for patients with kidney disease and cancer, for those who are in an intensive care unit, and for infants and elderly patients in order to perform adequate nutrition management.

지방 및 단백질화학 3 credit

(FOOD LIPID AND PROTEIN CHEMISTRY)

Structure, chemical and physical properties of lipid and protein are studied. And also, characteristics and functionalities of lipid and protein in food will be discussed.

지역사회영양학특론 3 credit

(ADVANCED COMMUNITY NUTRITION)

This course introduces core nutrition concepts and tools needed to enter the health professions with a community-based care perspective.

탄수화물화학 3 credit

(FOOD CARBOHYDRATE CHEMISTRY)

Physical and chemical structure of carbohydrates are discussed. Also, functional properties of carbohydrates in food are studied.